



HEXACHLOROBENZENE

CAS # 118-74-1

Agency for Toxic Substances and Disease Registry ToxFAQs

September 1997

This fact sheet answers the most frequently asked health questions (FAQs) about hexachlorobenzene. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. This information is important because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

HIGHLIGHTS: Exposure to hexachlorobenzene occurs primarily from eating low levels in contaminated food. The main health effect from eating highly contaminated food is a liver disease. Hexachlorobenzene has been found in at least 84 of the 1,430 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What is hexachlorobenzene?

(Pronounced hĕk'sə-klôr' ô-bĕn'zĕn')

Hexachlorobenzene was widely used as a pesticide to protect the seeds of onions and sorghum, wheat, and other grains against fungus until 1965. It was also used to make fireworks, ammunition, and synthetic rubber. Currently, there are no commercial uses of hexachlorobenzene in the United States.

Hexachlorobenzene is a white crystalline solid that is not very soluble in water. It does not occur naturally in the environment. It is formed as a by-product while making other chemicals, in the waste streams of chloralkali and wood-preserving plants, and when burning municipal waste.

What happens to hexachlorobenzene it enters the environment?

- ☐ Hexachlorobenzene can remain in the environment for a long time.
- ☐ It breaks down very slowly.
- ☐ It does not dissolve in water very well, so most of it will remain in particles on the bottom of lakes and rivers.
- ☐ Hexachlorobenzene sticks strongly to soil.

- ☐ High levels can build up in fish, marine mammals, birds, lichens, and animals that eat lichens (like caribou) or fish.
- ☐ It can also build up in wheat, grasses, some vegetables, and other plants.

How might I be exposed to hexachlorobenzene?

- ☐ Eating low levels in contaminated food.
- ☐ Eating contaminated fish.
- ☐ Drinking milk or eating dairy products or meat from cattle grazing on contaminated pastures.
- ☐ Drinking small amounts in contaminated water.
- ☐ Breathing low levels in contaminated air.
- ☐ Eating or touching contaminated soil.
- ☐ For babies, drinking contaminated breast milk from exposed mothers.
- ☐ Working at a factory that uses or produces it unintentionally.

How can hexachlorobenzene affect my health?

A study of people in Turkey who ate bread accidentally contaminated with hexachlorobenzene showed that the young children of mothers who ate it or young children who ate it themselves can have lower survival rates.

ToxFAQs Internet address via WWW is <http://www.atsdr.cdc.gov/toxfaq.html>

Nursing infants can be exposed to hexachlorobenzene through breast milk if their mothers have been exposed. Unborn children may also be affected if their mother have been exposed.

The people in Turkey who ate the contaminated bread suffered from a liver disease called porphyria cutanea tarda. This disease can cause red-colored urine, skin sores, change in skin color, arthritis, and problems of the liver, nervous system, and stomach.

Studies in animals show that eating hexachlorobenzene for a long time can damage the liver, thyroid, nervous system, bones, kidneys, blood, and immune and endocrine systems.

The immune system of rats that breathed hexachlorobenzene for a few weeks was harmed.

How likely is hexachlorobenzene to cause cancer?

The U.S. Department of Health and Human Services (DHHS) has determined that hexachlorobenzene may reasonably be expected to be a carcinogen.

Animals that ate hexachlorobenzene for months or years developed cancer of the liver, kidneys, and thyroid. There is no strong evidence that it causes cancer in people.

A factory worker who breathed air for several years that contained many chemicals, but mostly hexachlorobenzene, developed liver cancer. However, because the factory worker breathed other chemicals at the same time that could cause cancer, it is not known if the liver cancer was caused by hexachlorobenzene alone or by a mixture of chemicals.

Is there a medical test to show whether I've been exposed to hexachlorobenzene?

Blood, fat, and tissue samples can be tested to show if you

have ever been exposed to hexachlorobenzene. However, these tests cannot tell you when you were exposed or to how much, or whether health effects will occur. These tests aren't available at most doctors' offices, but can be done at special laboratories that have the right equipment.

Has the federal government made recommendations to protect human health?

The EPA has recommended that drinking water should not contain more than 0.05 milligrams of hexachlorobenzene per liter of water (0.05 mg/L) in water that children drink, and should not contain more than 0.2 mg/L in water that adults drink for longer periods (about 7 years). The EPA has set a maximum contaminant level of 0.001 mg/L in drinking water.

The EPA requires that spills or accidental releases into the environment of 10 pounds or more of hexachlorobenzene be reported to the EPA.

Glossary

Carcinogen: A substance with the ability to cause cancer.

CAS: Chemical Abstracts Service.

Milligram (mg): One thousandth of a gram.

Soluble: Dissolves easily in water.

Source of Information

This ToxFAQs information is taken from the 1996 Toxicological Profile for Hexachlorobenzene produced by the Agency for Toxic Substances and Disease Registry, Public Health Service, U.S. Department of Health and Human Services, Public Health Service in Atlanta, GA.

Animal testing is sometimes necessary to find out how toxic substances might harm people and how to treat people who have been exposed. Laws today protect the welfare of research animals and scientists must follow strict guidelines.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop E-29, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 404-639-6359. ToxFAQs Internet address via WWW is <http://www.atsdr.cdc.gov/toxfaq.html> ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

